REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 3-5, and 7-8 are presently active in this case, Claims 1, 3, 5, 7 and 8 having been amended and Claims 2, 6, and 9-20 canceled by the present amendment.

In the outstanding Official Action, Claims 1-20 were rejected under 35 USC §101 as directed to non-statutory subject matter and under 35 U.S.C. §102(b) as being anticipated by Otter ('Hybrid Modeling in Modelica based on the Synchronous Data Flow Principle', 1999).

In light of the several grounds for rejection, the claims have been amended to clarify the claimed subject matter thereby to more clearly define statutory subject matter and more clearly patentably distinguish over the cited prior art. Support for the present claim amendments is explained as follows:

(1) The feature "simulating a behavior of a mechanism of a mechanical device that is regulated by mechanism control software" is supported by the specification, page 23, lines 24-27.

(2) The feature "tree structures as internal data expressions that allow execution of a simulation" is supported by the specification, page 13, lines 20-24.

(3) The feature "starting a simulation of the mechanism after a completion of converting the continuous system equations;" is supported by the specification, page 29, lines 1-7.

(4) The feature "wherein the data is supplied to the mechanism control software as a response to a control signal provided from the mechanism control software" is supported by the specification, page 26, line 25 through page 27, line 4.

(5) The phrase "second event" corresponds to "events E1 and E2" described on page 27, line 23. The specification, at page 28, lines 3 to 9 describes that "as described above, in

this hybrid simulation, a description required to achieve collaboration with an external control system to be controlled in the simulation can be easily described on the identical source. Of course, different simulation results are obtained depending on the state of the object to be controlled."

Accordingly, no new matter is added by the present amendment.

In light of the present amendment, the pending claims are believed to state a useful, concrete and tangible result and are thus believed clearly to be statutory under 35 USC § 101.

In particular, the recitation of "converting, by executing the first program, data structures of all the continuous system equations into tree structures as internal data expressions that allow execution of a simulation" and "starting a simulation of the mechanism after a completion of converting the continuous system equations" in amended Claims 1 and 5 corresponds to the descriptions on page 13, line 20 through page 14, line 24 in the specification. Claims 1 and 5 thus bring about the advantage that the simulation execution speed drop due to parsing of a model description, a Garbage Collection (GC) process, and the like during simulation can be avoided. In the present invention, simulation can be performed at high speed and its performance speed does not vary unexpectedly, unlike with an interpreter language. This advantage can be obtained by generating tree structures from continuous system equations as internal data expressions prior to the simulation.

Further, the claimed invention includes "executing a simulation to produce output data that expresses the behavior of the mechanism," whereby it is clear that the claims state a useful, concrete and tangible result, i.e., "output data that expresses the behavior of the mechanism." Accordingly, it is respectfully submitted that the outstanding rejection under 35 USC §101 has been overcome and withdrawal thereof is respectfully requested.

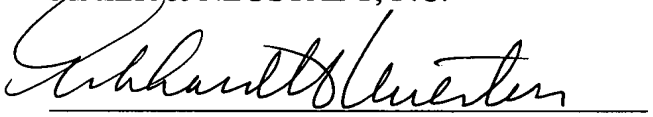
Turning now to the rejection under 35 USC §102(b), and first addressing the comments stated in paragraph a at pages 4 and 5 of the Official Action, Otter discloses a SampledSystem model. Assuming arguendo that the SampledSystem model corresponds to the applicants' hybrid model descriptions as shown in FIGS. 5 and 10 (104 in FIG. 1), nevertheless Otter does not disclose generating first to third programs by extracting a description of continuous system equations, a description of switching of the continuous system equations upon state transition, and a description of an additional process from the SampledSystem model to be processed. The outstanding Office Action persists in a correlation between equations 2.1a-2.1b and equations 2.2a on page 151 and the SampledSystem model (including a description of continuous system equations a description of an additional process) on page 152 in Otter.

In item e on page 5 in the outstanding Office Action, the outstanding Office Action refers to the last paragraph in the left column on page 152 of Otter, which describes that "... the order of the equations is determined by data flow analysis resulting in an automatic synchronization of continuous and discrete equations." Thus, Applicants respectfully submit that the finding stated in the outstanding Office Action that "the equations shown on page 151 of the prior art are converted to the data structures that allow execution of a simulation with the code shown on page 152" is incorrect. Further, Otter does not disclose the above-described subject matter of "converting, by executing the first program, data structures of all the continuous system equations into tree structures as internal data expressions that allow execution of a simulation" and "starting a simulation of the mechanism after a completion of converting the continuous system equations" recited in amended Claims 1 and 5.

Consequently, in view of the deficiencies in Otter above described, it is respectfully submitted that the amended claims patentably define over this reference and are in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

H:\247091USAMENDMENT-8.8.07.DOC